UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region 1
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September 17, 2013

Mr. Thomas S. Burack, Commissioner
New Hampshire Department of Environmental Services
29 Hazen Drive, PO Box 95
Concord, NH 03302-0095

By letter of January 14, 2013, the New Hampshire Department of Environmental Services ("DES") submitted revisions to its surface Water Quality Standards ("WQS") rule for United States Environmental Protection Agency ("EPA") review. DES adopted the revisions on May 21, 2008 and August 23, 2011, and New Hampshire's Chief Assistant Attorney General certified the revisions on January 4, 2013 as having been duly adopted pursuant to state law. EPA has completed its review of the submitted revisions.

I commend DES for adopting many revisions to its water quality standards that strengthen the ability to protect New Hampshire's waters, such as updating criteria for metals and improving antidegradation implementation procedures.

EPA's review of DES's WQS submission was limited to the provisions that are new or revised compared to the 1999 WQS, consistent with the authority provided in Section 303(c)(3) of the Clean Water Act ("CWA"). Pursuant to Section 303(c)(3) of the Clean Water Act and 40 C.F.R. Part 131, I hereby approve the following revisions:

Criteria (40 C.F.R. § 131.11)

- Update to the criteria in Env-Wq 1703.21 Table 1703.1 for selenium, cadmium and silver to protect aquatic life, consistent with EPA's National Recommended Water Quality Criteria ("NRWQC");
- Addition of Streamlined Water-Effect Ratio and Biotic Ligand Model procedures as options for determining site specific criteria for copper in Env-Wq 1703.21 and 1704.02(b);
- Revision of the footnote letter "l" at Env-Wq 1703.22(l) as it applies to barium, beryllium, 2,4-D chlorophenoxy herbicides, hexavalent chromium, 1,2-trans-dichloroethylene, methoxychlor, selenium, toluene, and 1,1,1-trichloroethane and the resulting effective criteria revisions as explained in the supporting discussions below. The footnote requires use of the 2013 Maximum Contaminant Levels[1] (MCL) as the criteria where they are more stringent than the ones in the criteria table at Env-Wq 1703.1; and

[1] The MCL is the maximum amount of a contaminant allowed in water delivered to a user of any public water system under the Safe Drinking Water Act.

Antidegradation Implementation Procedures (40 C.F.R. §131.12)

- Revision of procedures for alternatives analysis and determination of net economic or social benefits in Env-Wq 1708.10.

EPA finds that the revision to Env-Wq 1703.11, which adds a paragraph regarding minimum state enforcement of the turbidity requirement, is not a water quality standard requiring EPA review and approval pursuant to Section 303(c)(3) of the Clean Water Act and 40 C.F.R. Part 131, because it does not revise the existing turbidity criteria. The turbidity criteria for Class A and B waters state:

> *Class A waters shall contain no turbidity unless naturally occurring.*
>
> *Class B waters shall not exceed naturally occurring conditions by more than 10 NTUs.* (Env-Wq 1703.11(b)).

The revision adds the following paragraph:

> *For purposes of state enforcement actions, if a discharge causes or contributes to an increase in turbidity of 10 NTUs or more above the turbidity of the receiving water upstream of the discharge or otherwise outside of the visible discharge, a violation of the turbidity standard shall be deemed to have occurred.*(Env-Wq 1703.11(c)).

Our understanding is that the new language identifies the circumstances in which a violation of the turbidity standards *must* be deemed to have occurred in any enforcement action brought by the State against a discharger to directly enforce the water quality standards. It is also our understanding that the new paragraph does not affect the State's ability to assess water bodies' attainment or nonattainment of the turbidity criteria which call for comparisons against naturally occurring conditions. In addition, the new paragraph does not affect how the turbidity criteria would be evaluated when EPA, in issuing NPDES permits, determines under 40 C.F.R. § 122.44(d) whether a discharge has a reasonable potential to cause or contribute to a violation of water quality standards, even if that discharge is contributing to an increase of less than 10 NTU above the turbidity of the receiving water.

EPA also finds that the revisions to Env-Wq 1708.12 regarding the transfer of water from one basin to another are not water quality standards requiring EPA review and approval pursuant to Section 303(c)(3) of the Clean Water Act and 40 C.F.R. Part 131 because the revisions do not affect criteria, designated uses or antidegradation requirements.

We are still reviewing the addition of uncontaminated geothermal cooling water to the list of permanent discharges in Env-Wq 1708.09(c) that are pre-determined to cause an insignificant lowering of water quality. We request that DES submit a technical basis for adding uncontaminated geothermal cooling water explaining why DES expects elevated temperatures, potentially associated with geothermal cooling water discharges, to cause insignificant lowering of water quality.

In addition, we are still reviewing the revision of the footnote letter "l" at Env-Wq 1703.22(l) as it applies to antimony, cyanide, 1,2-dichlorobenzene, 1,2-trans-dichloroethylene, ethylbenzene, and 1,2,4-trichlorobenzene. The revision of footnote letter "l" effectively revises the human health criteria (for water and fish ingestion) for

those pollutants to the current MCLs (which are more stringent than New Hampshire's previous criteria for those pollutants). However, current EPA recommendations for human health criteria are lower than the MCLs for these six pollutants. We request that DES submit a scientific basis to show how the MCL levels for these six pollutants are sufficient to support designated recreational and fishing uses in New Hampshire waters. Alternatively, DES could further revise its WQS to adopt EPA's recommended criteria for these pollutants.

We are also still reviewing the revision to the aquatic life ammonia criteria. EPA has recently issued updated 304(a) recommendations for aquatic life ammonia criteria that are lower than New Hampshire's ammonia criteria revisions. Therefore, we request that DES submit a scientific basis to show how New Hampshire's revised ammonia criteria are sufficient to support aquatic life uses. Alternatively, DES could further revise its WQS to adopt EPA's recommended aquatic life ammonia criteria.

Pursuant to Section 303(c)(3) of the CWA and 40 C.F.R. Part 131, I am approving all additional changes to the WQS contained in the January 14, 2013 submission that are not specifically identified above. While the revisions approved in this group are also important, they are more "housekeeping" in nature, or clarifications, or administrative changes related to implementation.

Supporting Discussion of Approvals

Criteria (40 C.F.R. § 131.11)

Revisions to selenium, cadmium and silver criteria

EPA's approval of the revisions to the numeric criteria for selenium, cadmium and silver in Env-Wq 1703.21 is based on a review of whether the criteria protect the applicable designated uses, including a consideration of EPA's National Recommended Water Quality Criteria published pursuant to Section 304(a) of the CWA. EPA finds that the newly adopted and revised criteria are at least as protective as the EPA recommended criteria in all cases, and are protective of designated uses for the reasons explained in the EPA criteria documents for each chemical constituent.[2]

Site Specific Copper Criteria Development Procedures

EPA's approval of the inclusion of language in Env-Wq 1703.21 and 1704.02, which authorizes the use of the "Streamlined Water-Effect Ratio Procedure for Discharges of Copper" (EPA-822-R-01-005) or the Biotic Ligand Model (freshwater only) (EPA-822-R-07-001) to develop site specific copper criteria for the protection of aquatic life uses is based on a review of whether these procedures could derive revised criteria that are at least as protective as the EPA recommended criteria. The EPA criteria documents and methodologies referenced above, and in the new WQS language, explain the reasons why criteria developed using those methodologies are protective of aquatic life uses. Please be aware that while EPA is approving the inclusion of these methodologies in the WQS, any site specific criteria developed using either the Water-Effect Ratio, the Biotic Ligand Model, or any other methodology, must be submitted to EPA for review and approved by

[2] The National Recommended Water Quality Criteria and support documents are available at http://water.epa.gov/scitech/swguidance/standards/criteria/current/index.cfm.

EPA, pursuant to Section 303(c)(3) of the Clean Water Act and 40 C.F.R. Part 131, before they can be effective for federal law purposes.

Revision of the footnote letter "l" at Env-Wq 1703.22(l)

Footnote "l", which applies to Table 1703.1, was revised as follows (new language underlined):

> (l) *The letter "1" shall indicate that a more stringent drinking water maximum contaminant level (MCL) has been issued by EPA and the department shall use the MCL if it is more limiting of the two criteria. The MCL for chromium is for total chromium (Cr+6 plus Cr+3).*

The revision of footnote letter "l" effectively establishes lower human health criteria (for water and fish ingestion) for certain pollutants than the criteria published in the New Hampshire water quality standards. Table 1 identifies the nine criteria annotated with footnote letter "l" for which EPA is taking action. As can be seen from Table 1, for eight of the nine pollutants, the MCLs are lower than the published New Hampshire criteria, and so the MCLs are the effective criteria. For one, barium, the published New Hampshire criterion is lower than the MCL and so footnote "l" has no effect.

Table 1 – Summary of Criteria and Effects of Footnote Letter "l"

Pollutant	Published NH Water Quality Criteria (units/liter)	MCL as of 2013	Effective NH Water Quality Criteria (units/liter)
Barium	1.0 mg	2.0 mg	**1.0 mg**
Beryllium	No criteria	4 ug	**4 ug**
2,4-D chlorophenoxy herbicides	100 ug	70 ug	**70 ug**
Chromium +6	No criteria	100 ug	**100 ug**
1,2 trans-dichloroethylene	700	100 ug	**100 ug**
Methoxychlor	100 ug	40 ug	**40 ug**
Selenium	170 ug	50 ug	**50 ug**
Toluene	6.8 mg	1 mg	**1 mg**
1,1,1-Trichloroethane	No criteria	200 ug	**200 ug**

EPA's approval of the revision of the footnote letter "l" at Env-Wq 1703.22(l) as it applies to barium (which resulted in no change), beryllium, 2,4-D chlorophenoxy herbicides, hexavalent chromium, 1,2-trans-dichloroethylene, methoxychlor, selenium, toluene, and 1,1,1-trichloroethane is based on a review of whether the resulting effective criteria, as identified in Table 1, protect the applicable designated uses, including a consideration of EPA's National Recommended Water Quality Criteria published pursuant to Section 304(a) of the CWA. EPA finds that the newly adopted and revised

criteria are at least as protective as the EPA recommended criteria in all cases, and are protective of designated uses for the reasons explained in the EPA criteria documents for each chemical constituent. EPA's approval is also based on consideration of the current (2013) MCLs for these pollutants and not on future revisions which may or may not meet designated uses.

Antidegradation Implementation Procedures (40 C.F.R. §131.12)

Revision of procedures for alternatives analysis and determination of net economic or social benefits in Env-Wq 1708.10

EPA approves the adopted revisions to the procedures for conducting an alternatives analysis and determining net economic and social benefits because the new language defines these processes more clearly; improves the ability to protect existing uses, high quality waters, and Outstanding Resource Waters of New Hampshire; and is consistent with 40 C.F.R. § 131.12 and EPA guidance.

Recommendations for Future WQS Revisions

EPA offers the following recommendations to improve the clarity, transparency and protectiveness of New Hampshire's WQS in future revisions.

- Revise or remove footnote letter "l" and make any future revisions to criteria based on more stringent MCLs by specifically adopting such criteria and including them in Env-Wq 1703.21 Table 1703.1, rather than through operation of the footnote;
- Publish the criteria approved herein for beryllium, 2,4-D chlorophenoxy herbicides, hexavalent chromium, 1,2-trans-dichloroethylene, methoxychlor, selenium, toluene, and 1,1,1-trichloroethane in Env-Wq 1703.21 Table 1703.1; and
- As discussed above, consider adoption of EPA's updated recommended criteria for ammonia, antimony, cyanide, 1,2-dichlorobenzene, 1,2-trans-dichloroethylene, ethylbenzene, 1,2,4-trichlorobenzene as well as numerous other pollutants for which EPA has updated criteria.

We look forward to continued cooperation with New Hampshire in the development, review and approval of water quality standards pursuant to our responsibility under the Clean Water Act. If you have any questions, please contact Ellen Weitzler (617-918-1582).

Sincerely,

Ken Moraff, Acting Director
Office of Ecosystem Protection